

μ RS Update

Assembly

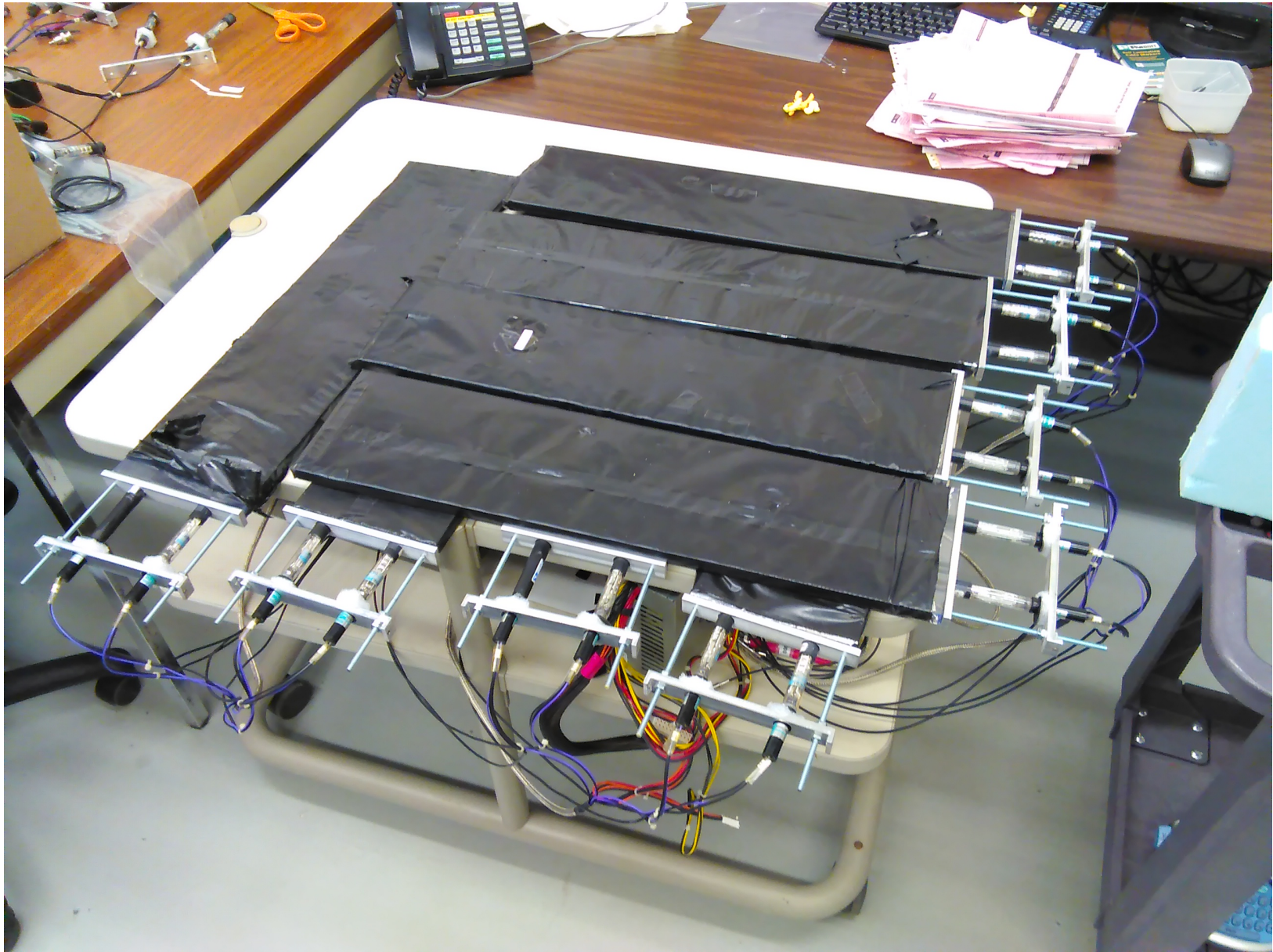
Received & assembled all parts.

- Aluminium brackets were threaded upside down.
- Had to reverse the way they were mounted \Rightarrow could no longer use set screws to fix to paddles.
- Mounted with epoxy instead.
- Plastic/metal bond is not strong; reinforced with tape.
- Not ideal but best we can do without refabrication.



Assembly

- We are missing the parts for one bracket.
- Tried to improvise replacement parts with duct tape & plastic knives from the FTBF common room.
 - One should not do science with plastic knives.
 - It doesn't work.
- As such we currently have 15 operational paddle assemblies, not the 16 we need for 4 complete layers.
 - Either we come up with another innovative bracket replacement (plastic spoons?) or we install with one incomplete layer (75% efficiency factor).



Installation

- Existing wrapping was too bulky for paddles to fit into μ RS alongside existing paddles.
- Have begun re-wrapping with thinner material – doesn't take long, just need to persuade Todd to part with the rest.
- Some concerns about how light-tight we can make our paddle assemblies
 - Testing yesterday showed one 2-PMT assembly to have a ~ 40 Hz signal rate; expect cosmic μ signal at ~ 15 Hz.
 - Experiments with different levels of wrapping show a high level of intrinsic noise beyond light-tighting issues – coincidence requirements with perpendicular paddles may help mitigate this.
 - May limit the way we can read out the PMT signals \Rightarrow require more logic crates.
- These PMTs also have a surprisingly high current draw (~ 5 mA to power one pair). We may need more power supplies.

Installation

- We are very close to being able to install.
- Think we can do so before beam comes back next week.
- If you would like to help out, all free hands are appreciated!

Animal Fact Friday

Snake strikes are so fast that the snake experiences forces of up to 30G – 3 times more than fighter pilots can stand without blacking out.



Their flexible skulls may be the key to how they can strike so fast without concussing themselves.